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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,739	10/01/2004	Hung-Hsiang Chang	MTKP0105USA	5738
27765 7590 06/26/2007 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER PHAM, VAN T	
			ART UNIT 2627	PAPER NUMBER
			NOTIFICATION DATE 06/26/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/711,739

Applicant(s)

CHANG ET AL.

Examiner

VAN T. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/25/2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed 04/25/2007 have been considered but they are not persuasive.

Claims 1-2, 11-12-13, and 20:

Applicant's asserted, "Hung does not teach the limitation "receiving acceleration information indicating an acceleration of the sled actuator and/or pickup head". The Examiner has referenced Figs. 5-6 and Cols 4-6 of Hung for teaching this limitation, however, close Examination of Figs. 5-6 do not explicitly reveal acceleration information of the sled actuator being received or utilized by the system. Fig. 5 clearly shows Hung's long seek control system primarily operating based on control signals V_{ref} (reference velocity), and V_{est} (estimated velocity), which in turn are based only on JT (target track), AT (actual track), RTC (residual track count) inputs", which is incorrect. Hung discloses a reference velocity used in the reference velocity mapping unit 502 (see Fig. 5), and in Fig. 6, the horizontal axis is the residual track count RTC and the vertical curve is divided into a linear part and several quadratic parts with different corresponding quadratic functions As shown in FIG. 6, the reference velocity curve corresponding to the residual track count from zero to r_1 is the linear part. The reference velocity curve corresponding to the residual track count RTC from r_1 to r_2 is a first quadratic functional part. The reference velocity curve corresponding to the residual track count from r_2 to r_3 is a second quadratic functional part, and the reference velocity curve corresponding to the residual track count greater than r_3 is a third quadratic functional part. To calculate the V_{ref} which has to depend on acceleration discount factors α_1 , α_2 , and α_3 . The acceleration discount factors of α_1 , α_2 , and α_3 are reduced as the residual track count is reduced. A different acceleration discount factor is corresponding to a different accelerating value. When the

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acceleration discount factor is larger, the corresponding accelerating value is also larger (see cols. 4-5). Therefore, there is acceleration information as recite in claim 1. Also Applicant's asserted, "Hung teaches sled actuator control based on estimated velocity V_{est} and reference velocity V_{ref} , and not "driving the sled actuator to move according to... the acceleration information" as described in the limitation of claim 1. As mention above that the V_{ref} is based on the acceleration values α_1 , α_2 , and α_3 ; therefore, driving the sled actuator to move according to the remaining tracks information, the velocity information, and the acceleration information.

Moreover, Applicant's asserts, "Hung teaches using only the estimated velocity and reference velocity in controlling the sled, and does not teach using the acceleration of the sled actuator to determine its control" which is correct that there is no acceleration of the sled. However, claim 2 recites "the driving voltage is a function of the velocity and the acceleration of the sled actuator **and/or the pickup head**. The estimated velocity V_{est} is subtracted from the reference velocity V_{ref} to obtain the sled control effort u , which is then outputted to the sled actuator 508, wherein the sled actuator 508 is used to move the sled. Moreover, the V_{ref} is based on the acceleration information (see the response above).

Claims 3-10, and 14-19 are amended, and moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-10 and 14-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 3 recites, “**the driving voltage** is influenced by a product of the sled actuator and/or the pickup head and a first multiplier” which is not the same the driving signal in the Fig. 5, which the newly added Specification discloses “Fig.5 is a block diagram of illustrating the component influenced of **the driving voltage** by *the velocity of the sled actuator and/or the pickup head being the product of the velocity and a first multiplier KP, and the component influenced by the acceleration of the sled actuator and/or the pickup head being the product of the acceleration and a second multiplier KD.*”, moreover, equation 1:
$$U = KP \cdot V + KD \cdot A$$
.

Therefore, the driving voltage is a product of two signals “*the velocity of the sled actuator and/or the pickup head being the product of the velocity and a first multiplier KP, and the component influenced by the acceleration of the sled actuator and/or the pickup head being the product of the acceleration and a second multiplier KD.* However, the claim 3 recites the driving voltage is influenced by a product of the sled actuator and/or the pickup head and a first multiplier only.

Claim 7 recites, “Claim 3 recites, “**the driving voltage** is influenced by a product of the acceleration of the sled actuator and /or the pickup head and a second multiplier”. From claim 3 and 7, there are two different driving voltages. Which is not shown in any Figure or disclose.

Hence there would be undue experimentation for one of skill in the art to make and use the invention.

Claims 14 and 17, see rejection above of claims 3 and 7, respectively.

Claims 4-6 , 8-10, 15-16, and 18-19 fall with parent claim.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “the first multiplier is a variable determined by *the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head*” and “the second multiplier is a variable determined by the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Noted: this drawing has been rejected on the previous Office Action mailed on 01/25/2007. Even though, there is a new drawing (Fig. 5) is disclosed but it would not solved the above problem. Fig. 5 does not show the remaining tracks information.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 11-13, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hung et al. (Us 6.606,282).

Regarding claim 1, Hung et al. discloses a method for controlling long seeking operation in an optical disc drive, the optical disc drive comprising a sled actuator, a pickup head installed on the sled actuator for accessing data on an optical disc, and a controller for controlling the sled actuator to move together with the pickup head, the method comprising:

(a) receiving remaining tracks information indicating a number of tracks remained to be crossed by the sled actuator and/or the pickup head (see Fig. 5, track count sensor 521 and its description);

(b) receiving velocity information indicating a velocity of the sled actuator and/or the pickup head (see Fig. 5, sled actuator 508);

(c) receiving acceleration information indicating an acceleration of the sled actuator and/or the pickup head (see Figs. 5-6 and cols. 4-6);

(d) driving the sled actuator to move according to the remaining tracks information, the velocity information, and the acceleration information (see Fig. 5 and abstract, cols. 2-3).

Regarding claim 2, see Fig. 5, discloses the method of claim 1 wherein in step (d), the controller outputs a driving voltage to control the movement of the sled actuator and/or the pickup head; the driving voltage is a function of the velocity and the acceleration of the sled actuator and/or the pickup head.

Regarding claim 11, see Fig. 5, discloses method of claim 1 further comprising: outputting an initial driving voltage to the sled actuator with the controller according to target tracks in order to control an initial movement of the pickup head (inherently).

Regarding claim 12, see rejection above of claim 1.

Regarding claim 13, see rejection above of claim 2.

Regarding claim 20, see rejection above of claim 11.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action (for claims 1-2, 11-13 and 20).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action (for claims 3-10 and 14-19).

Cited References

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references relate to a method for long seeking control of an optical read/write head which includes a sled moved by a sled motor, and lens mounted on the sled (Chan et al. 2003/0099166); A long seek control system and method include a reference velocity mapping unit that obtains a reference velocity when the dual actuator is moved by the residual track count (Hung et al. 2002/0196715).

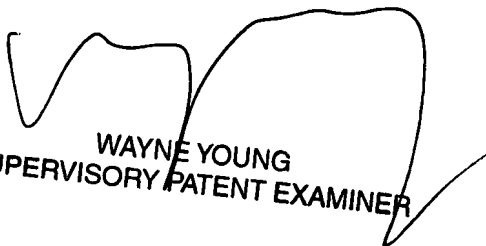
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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number 571-272-7590. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER